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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,640	09/05/2003	Devendra Kumar	FSI0006/US/3	8100
33072	7590	04/05/2004	EXAMINER	
KAGAN BINDER, PLLC SUITE 200, MAPLE ISLAND BUILDING 221 MAIN STREET NORTH STILLWATER, MN 55082			EDWARDS, LAURA ESTELLE	
			ART UNIT	PAPER NUMBER
			1734	

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/656,640	Applicant(s) KUMAR ET AL.	
	Examiner Laura E. Edwards	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-48 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 38-48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-911) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the central source of utility independently coupled to the heat/cool stations as recited in claim 46 needs to be added to the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 46 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 46, Applicants refer to a central source of utility coupled to heat/cool stations and the utility source is independent therefrom and it is unclear what is meant by this central utility and is it independently controlled? Clarification is necessary.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 42 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Batchelder et al (US 6,544,338).

Batchelder et al teach an apparatus or modular system for processing microelectronic devices comprising a process chamber for receiving a coated substrate for processing (see col. 4, lines 65+ to col. 5, lines 1-12); a heat source (122) thermally coupled to the process chamber in a manner such that the substrate may be heated during processing; a source of a cooling gas (124b; see col. 13, lines 49-55) in fluid communication with the process chamber such that the cooling gas may be caused to contact the substrate during processing.

With respect to claim 48, see coating or dispensing station (108 in Figs. 2A or 2B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 38-41 and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batchelder et al (US 6,544,338) in view of Armstrong et al (US 6,072,163).

Batchelder et al teach an apparatus or modular system for processing microelectronic devices comprising a process chamber for receiving a coated substrate for processing (see col. 4, lines 65+ to col. 5, lines 1-12); a heat source (122) thermally coupled to the process chamber in a manner such that the substrate may be heated during processing; a source of a cooling gas (124b; see col. 13, lines 49-55) in fluid communication with the process chamber such that the cooling gas may be caused to contact the substrate during processing. Batchelder et al are silent concerning a temperature control system for controlling the heating and cooling of the substrate during processing. However, it was known in the art, at the time the invention was made, to provide a temperature control system connected to a heating/cooling modular system in order to control the exact temperature to which the coated substrate was exposed so as to ensure proper setting of the coating with good resolution as evidenced by Armstrong et al (see col. 1, lines 18-24, 27-30, col. 3, lines 1-19, and col. 24, lines 10+). It would have been obvious to one of

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ordinary skill in the art to provide a temperature control system as taught by Armstrong et al in the Batchelder et al apparatus in order to control the heating and cooling of the coated wafer during processing to ensure desired setting of coating on the substrate with good resolution. The incorporation of a temperature control system as taught by Armstrong et al in the Batchelder et al apparatus for facilitating precise heating and cooling of the coated substrate during processing is within the purview of one skilled in the art.

With respect to claim 39, Batchelder et al teach the use of lift pins (132) in the chamber to expose the substrate to heating and cooling processing.

With respect to claim 40, see col. 2, lines 39-41 of Batchelder et al wherein the inclusion of a door to the apparatus or modular system is seen as conventional in the art.

With respect to claim 41, see bake plate (122) of Batchelder et al.

With respect to claims 43-45, Batchelder et al recognize the addition of an input/output station (102), coating station (108a or 110a), at least one of more heating/curing stations (110a and 110b; also see Figs. 2a-2C) and a robot (112) for handling the wafer at the various stations.

With respect to claim 47, Batchelder et al teach the use of multiple heating/cooling modules such that the use of any of the above modules for pre-heating or post-heating is within the purview of one skilled in the art. Moreover, Armstrong et al recognize in the manufacture of microelectronics and the like, the baking, cooling, and hardening [curing] of the coated substrate as evidenced by col. 1, lines 18-30. In light of the teaching of Armstrong et al, it would have been obvious to one of ordinary skill in the art to use at least one of the heating/cooling modules of Batchelder et al for pre- and post- treatment processing of the coated substrate in the manufacture of microelectronic devices.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Edwards whose telephone number is (571) 272-1227.

The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Laura E. Edwards
Primary Examiner
Art Unit 1734

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April 2, 2004